

AMENDMENTS TO THE CLAIMS

Listing of Claims:

1.-19. (Canceled).

20. (Currently Amended) A method for dehumidification and/orand sanitation of sewage sludge in a drying-chamber, the method comprising:

receiving the sewage sludge on a conveyor made of net that is located inside the chamber;

wherein emitting thermal radiation from at least one element is used in the chamber,
wherein

the at least one element is positioned between an upper part and a lower part of the conveyor,

the thermal radiation is concentrated to one or more distinct wavelength ranges at which water has peaks for absorption of radiation energy, and

the wavelengths of the thermal radiation are shorter than the openings of the surface structure of the sewage sludge;

circulating air is circulated in the chamber by means of using a fan to take up moisture evaporated from the material sewage sludge; and the wavelengths of the radiation are shorter than the openings of the surface structure of the sewage sludge;

recovering energy from the moisture using a condenser;

maintaining the sewage sludge at a constant temperature within the range of 70-120 °C during the dehumidification cycle.

21. (Currently Amended) The method of claim 20, wherein the at least one element is disposed in the drying chamber emittingemits thermal radiation and the emitted radiationthat is concentrated to exact wavelength ranges where the water has an absorption coefficient greater than approximately 1,000 cm⁻¹, while the radiation is reduced in other areas.

22. (Previously Presented) The method of claim 21, wherein the radiation is concentrated to the wavelength ranges of approximately 6-7 μm and approximately 10-20 μm , while the radiation in the intermediate range of approximately 7-10 μm is reduced.

23. (Currently Amended) The method of claim 20, ~~wherein further comprising monitoring the prevailing moisture ratio and/or the temperature of the material~~^{sewage sludge} and/or the chamber is monitored.

24. (Currently Amended) The method of claim 23, wherein the moisture ratio of the material^{sewage sludge} and/or the chamber is monitored by means of one or more indicators.

25. (Currently Amended) The method of claim 23, wherein the moisture ratio of the material^{sewage sludge} and/or the chamber is monitored by means of a weighing machine, monitoring the total weight of the chamber.

26. (Currently Amended) The method of claim 20, ~~wherein further comprising circulating the air of the chamber is circulated by means of the fan, an air inlet placed at one end of the chamber and an air outlet placed at an opposite end of the chamber; that the air is recirculated by means of through a conduit going from one end of the chamber to the opposite end; that~~

~~wherein a heat exchanger is placed in the conduit; that one or more dampers are arranged to let out air from the chamber; and/or that a condenser is placed in the chamber for recovery of energy.~~

27.-28. (Canceled).

29. (Currently Amended) The method of claim 27-20, wherein the thermal radiation is reflected on high-reflective material on the inside of the chamber and on the surface of the conveyor belt receiving the material.

30.-31. (Canceled).

32. (Currently Amended) An apparatus for dehumidification, drying or the like and sanitation of sewage sludge in accordance with the method as claimed in claim 20, wherein the apparatus comprises:

a drying chamber including at least one element disposed in the drying chamber for emitting thermal radiation; a fan is provided for the circulation of air in the drying chamber; indicators are provided for sensing the temperature and/or moisture ratio of the chamber and/or the material sewage sludge to be dehumidified, dried or the like; and

a control system (PLC system) is provided for controlling the elements at least one element and the fan in response to signals received from the indicators.

33. (Currently Amended) The apparatus of claim 32, wherein the elements are at least one element is mounted in racks a rack and that the racks have having surfaces displaying high reflectance.

34. (Currently Amended) The apparatus of claim 32, wherein the drying inside of the chamber is constructed from a chamber which, on the inside, is made of or clad with a material displaying high reflectance;

wherein the drying-chamber is provided with an air inlet, an air outlet, a fan system, and a conduit, including a heat exchanger, for recirculation of the air of the chamber and one or more ventilation dampers;

wherein indicators are provided for sensing temperature and air humidity in the drying chamber;

wherein indicators are provided for sensing the weight of the sewage sludge; and wherein the signals from all indicators are fed to a calculation and control device.

35. (Currently Amended) The apparatus of claim 32, wherein a conveyor belt and/or the condenser is placed inside the chamber.

36. (Currently Amended) The apparatus of claim 32, wherein each of the at least one element comprises an electrical resistor surrounded by a tube or the like and/or that the part surrounding the electrical resistor that is made of material having properties to give the desired radiation spectrum.

37. (Canceled).

38. (Previously Presented) A method for treating material in a chamber, the method comprising:

emitting thermal radiation into the chamber, the thermal radiation having

- a relatively greater intensity in at least one wavelength range for which water has an absorption coefficient greater than 1,000 cm⁻¹,
- a relatively lesser intensity at wavelengths outside of said at least one wavelength range, and
- wavelengths that are shorter than the openings of the surface structure of the material; and

circulating air in the chamber to take up moisture evaporated from the material.

39. (Previously Presented) The method of claim 38, comprising:

maintaining the material at a stationary location while emitting the thermal radiation.

40. (New) The method of claim 20, further comprising:

recovering plant nutrients from the sewage sludge.

41. (New) The method of claim 20, further comprising:

heating the at least one element using an energy carrying medium.